

DOCUMENT RESUME

ED 047 049

UD 011 214

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TITLE An Investigation of the Relationship of Three Variables--Intelligence, Creativity, and Language--in Disadvantaged, Preschool Negroes.
PUB DATE Feb 71
NOTE 8p.; Paper presented at the Annual Meeting of the American Educational Research Association, New York, N.Y., February 1971
EDRS PRICE MF-\$0.65 HC Not Available from EDRS.
DESCRIPTORS Cognitive Development, *Creativity, *Culturally Disadvantaged, Factor Analysis, *Intelligence Factors, *Language Skills, *Negro Youth, Preschool Children, Test Results
IDENTIFIERS Daily Language Facility Test, District Of Columbia, Torrance Test Of Creative Thinking, Wechsler Intelligence Scale

ABSTRACT

The purpose of this study was to examine the relationship of the variables of intelligence, creativity, and a language component in preschool disadvantaged Negro children. Major hypotheses were: (1) that the specific components of each variable had higher correlations within each variable than between variables; and (2) that each major loaded on a different factor. Results supported both major hypotheses. One of the major implications is that creativity can be measured on a separate dimension from language and verbal intelligence in preschool disadvantaged Negro children. [Not available in hard copy due to marginal legibility of the original document.] (Author/DM)

An Investigation of the Relationship of three variables - Intelligence
Creativity, and Language - in Disadvantaged, Preschool Negroes *

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Abstract

The purpose of this study was to examine the relationship of three variables -- intelligence, creativity, and a language component -- in preschool disadvantaged Negro children. Major hypotheses were (1) that the specific components of each variable had higher correlations within each variable than between variables; and (2) that each major loaded on a different factor.

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Instruments measuring intelligence (The Wechsler Preschool and Primary Scale of Intelligence), creativity (The Torrance Test of Creative Thinking - Figural 8 and The Mother Goose Test), and language (Items of Space and Location - Pictorial and Object forms and The Dailey Language Facility Test) were given to 104 randomly selected four year old disadvantaged Negro children who were enrolled in prekindergarten programs in Washington, D.C. Results supported both major hypotheses. Correlations of items within each variable were higher than correlations between variables. A factor analysis indicated that the verbal components of the intelligence test and of the three language measures loaded on Factor I. The two measures of creativity -- a verbal-pictorial measure and a figural measure -- loaded respectively on Factors II and III. Performance items on the intelligence test loaded on an additional factor. One of the major implications is that creativity can be measured on a separate dimension from language and verbal intelligence in preschool disadvantaged Negro children.

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Objectives of the Inquiry and Rationale

It has been extensively documented that, in general, Negroes score below whites on measures of intelligence. (Shuey 1966; Jensen 1969). Findings are less clear when dealing with children of preschool age. Kennedy (1963) cited various data reporting Binet intelligence results on young Negro children in which mean scores ranged from 88 to 103.2. Pasamanick's research (1946) on Negro infants suggested that Negroes were fully average. More recent research of Dreger and Miller (1960) concluded that young Negroes were well within the normal IQ range. In addition, it has been suggested that language development among the disadvantaged Negro is far below that of the middle class white (Deutsch, 1965; John, 1963.). Bernstein (1960) has offered the alternate hypothesis that the working class rely on a restricted language code, in contrast to their middle class counterparts who employ an elaborate code.

The present research was undertaken to determine if a measure relating to the broad range of intellectual abilities could be obtained on young disadvantaged Negroes that was relatively independent of traditional measures of intelligence or language. Work by Torrance (1965), Ward (1968) and Wallach and Kagan (1965) pointed to the area of creativity as a worthwhile one for further exploration. The question of whether intelligence and creativity could be measured on separate dimensions has been investigated extensively since Guilford proposed the model of the Structure of the Intellect. (Guilford 1950). Among those who support the

*Paper presented at AERA Meeting,
New York, N.Y., Feb., 1971

hypothesis of separate dimensions are Getzels and Jackson (1962) and Torrance (1965). Many studies were completed that dealt with the creativity - intelligence distinction in general, but only a few have been conducted that investigated the creativity-intelligence distinction specifically related to the disadvantaged, the Negro, or the very young child. Iscoe and Pierce-Jones (1964) found Negro children superior to whites on measures of divergent traditional thinking, even though whites received higher scores on measures of intelligence. The research of Wallach and Kogan (1965) and Ward (1968) also strongly supported the separate dimension (creativity-intelligence distinction) in young children. However, the creativity-intelligence distinction was discounted by other investigators. (See Wodtke 1964; Yamamoto 1965; Ketcham and Kheiralla 1963; Hasan and Butcher 1966; and Fuqua 1966). These researchers suggested that intelligence and creativity were not separate and distinct factors of human behavior, but rather had a positive relationship to each other. Conclusions related to the separate dimensions theory between intelligence and creativity are not yet resolved.

The effect of language functioning and its relationship to intelligence and creativity are not entirely clear. It has been hypothesized that disadvantaged Negroes received lower scores on traditional measures of intelligence because such measures usually have a high verbal component. Deutsch (1965), John (1963), and Bernstein (1961) have documented the language deficit among disadvantaged Negroes. More recently, however, Cazden (1966) and Baratz and Baratz (1970) suggested that the disadvantaged Negro does not have a language deficit; rather he exhibits language differences.

The major purpose of this study was to examine the relationship of the

three variables among a sample of preschool disadvantaged Negro children. Based on present thinking in this area, the variables for consideration were intelligence, creativity, and a language component.

Intelligence was operationally defined as the sum of specific measures of ability such as verbal reasoning, numerical ability, abstract thinking, spatial relationships, etc. It dealt primarily with measures of convergent thinking.

Creativity was operationally defined as a process in which the individuals used the factors of fluency, flexibility, originality, and elaboration in the approach to problem solving. It was primarily concerned with measures of divergent thinking.

The language component was operationally defined as the individual's ability to convey his understanding of a verbal direction by placing or verbally indicating one object in relation to another in space.

Hypotheses tested were: (1) the major variables exhibited higher intra- than inter-correlations; and (2) the major variables clustered into a number of different factors. Other hypotheses related to sex and age differences on each of the three variables.

Methods and Techniques

One hundred and four 4 year old disadvantaged Negroes who were attending prekindergartens in Washington, D. C. were randomly selected for this study. There were fifty-six males and forty-eight females with a mean age of fifty-five months.

Six instruments were used to obtain measures of the variables for

consideration. Intelligence was measured by the Wechsler Preschool and Primary Scale of Intelligence (WPPSI), an instrument containing both verbal and performance components and specifically designed for use with preschool children. Creativity was measured by two instruments: the Torrance Test of Creative Thinking - Figural (TTCT) and the Mother Goose Test (MGT). TTCT is a figural measure requiring drawing responses from the subjects to abstract figural stimuli. MGT is a verbal-pictorial measure requiring verbal responses to pictorial stimuli. The language component was measured with three measures. Two forms of an experimental test, Items of Space and Location, (ISL - Pictures and ISL-Objects) were used to measure the subject's ability to respond, both with pictures and objects, to prepositional phrases which located two objects in space. An additional instrument, the Dailey Language Facility Test, was also used.

Each subject was tested individually in two sessions by trained examiners.

Results and Educational Importance

Results of the study confirmed the hypotheses. An intercorrelation matrix of all variables indicated a much closer relationship of the components within each variable than between variables. A factor analysis revealed loadings on five separate factors. Factor I was a general verbal factor, with high loadings (above .40) from the verbal sections of the WPPSI and the two forms of ISL. Factor II was a figural creativity measure with high loadings from the TTCT-Figural. Factor III was a verbal measure of creativity with high loadings from the MGT only. Loadings on Factor IV included measures of language facility, verbal comprehension, and arithmetic reasoning. Finally, Factor V

seemed to be inherently spatial and perceptual.

The results of this study led to the conclusions that creativity can in fact be measured on a separate dimension from intelligence in a sample of this type. Thus, the ability to perform tests of creativity does not seem to be related to the ability to perform on measures of intelligence or language. It would be extremely valuable to replicate this study on other kinds of groups, such as middle class white, disadvantaged white, or rural groups of all types. If future findings supported the present findings, it might be worthwhile to pursue and refine the investigation, measurement, and development of creativity in disadvantaged populations.

It is recognized that the measurement of creativity is in its infancy, perhaps in the same position as was the measurement of intelligence some fifty years ago. New measurements of creativity must be developed with special emphasis on test format. In addition, additional standardized instruments and normative data need to be developed. Finally, the aims and goals of preschool programs may need to be modified to enhance and develop strengths in divergent thinking areas in addition to traditional cognitive thinking and readiness for school arenas.

References

- Baratz, Stephen and Joan. Harvard Educational Review, 39, 1970.
- Bernstein, Basil. "Language and Social Class." British Journal of Sociology, XI (September, 1960), 271-76.
- Cazden, Courtney B. "Subcultural Differences in Child Language: An Inter-disciplinary Review." Merrill-Palmer Quarterly, XII (1966), 185-219.
- Deutsch, Martin. "The Role of Social Class in Language Development and Cognition." American Journal of Orthopsychiatry, XXXV (January 1965), 78-88.
- Dreger, Ralph M., and Miller, Kent S. "Comparative Psychological Studies of Negroes and Whites in the United States." Psychological Bulletin, LVII, No. 5 (1960), 361-402.
- Fuqua, Norman. "An Analysis of the Relationships and Differences Among Measures of Creative Thinking and Selected other Factors in Educable and Less Educable Groups of Negro Children." Unpublished Ed.D. dissertation, Wayne State University, 1966.
- Getzels, Jacob W. and Jackson, Phillip. Creativity and Intelligence. New York: Wiley and Sons, 1962.
- Guilford, J. P. "Creativity." The American Psychologist, V, No. 9 (September, 1950), 444-54.
- Hasan, Parween and Butcher, E. J. "Creativity and Intelligence: A Partial replication with Scottish Children of Getzels and Jackson's Study." British Journal of Psychology, LVII (1966), 129-35.
- Iscoe, Ira and Pierce-Jones, John. "Divergent Thinking, Age and Intelligence in Negro and White Children" Child Development, XXXV (1964), 785-97.
- Jensen, Arthur R. "How much Can We Boost IQ and Scholastic Achievement?" Harvard Educational Review, XXXIX, No. 1 (1969), 1 - 123.
- John, Vera P. "The Intellectual Development of Slum Children: Some Preliminary Findings." American Journal of Orthopsychiatry, XXXIII (1963), 813-22.
- Kennedy, Wallace A.; Van de Riet, Vernon and White, James. A Normative Sample of Intelligence and Achievement of Negro Elementary School Children in the South-eastern U.S. Monograph Society for Research in Child Development, XXVIII, No. 6, 1963.
- Ketcham, W. A. and Kheiralla, S. "Creativity in Relation to Intelligence and School Achievement." in Inter-Institute Seminar in Child Development, Collected Papers, 1962, Dearborn, Michigan: Edison Institute, Greenfield Village, 1963, pp. 79-85.

References - continued

- Pasamanick, Benjamin. "A Comparative Study of the Behavioral Development of Negro Infants." The Journal of Genetic Psychology, LXIX (1946), 3 - 44.
- Shuey, Audrey M. The Testing of Negro Intelligence. Lynchberg: Bell Press, 1958, second edition, 1966.
- Torrance, E. Paul. "The Measurement of Creative Behavior in Children," in Productive Thinking in Education, eds. Mary Jane Aschner and Charles Bish. Washington: National Education Associates, 1965, pp. 199-216.
- Wallach, Michael and Kogan, Nathan. Modes of Thinking in Young Children. New York: Holt, Rinehart & Winston, 1965.
- Ward, William C. "Creativity in Young Children." Child Development, XXXIX, No. 3 (September, 1968), 737-54.
- Wodtke, Kenneth B. "Some Data on the Reliability and Validity of Creativity Tests at the Elementary School Level." Educational and Psychological Measurement, XXIV, No. 2 (1964), 399-408.
- Yamamoto, Kaoru. "Validation of Tests of Creative Thinking: A Review of Some Studies." Exceptional Children. XXXI (1965), 281-90.